

INNOVATIVE TECHNOLOGIES

Density Gradient Analyzer

ToronGradient-D1505



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Density Gradient Analyzer

The Density Gradient Column Apparatus is **ideal for precise density analysis of high molecular weight materials**, including natural and synthetic fibers, as well as resin-based products.

Commonly used in quality control processes, it ensures consistent material density across samples. The testing method complies with **ASTM D1505, ISO 1183-1, and ISO 11542-2 standards.**

The principle involves filling a glass column with two fully miscible liquids to create a linear density gradient—lighter at the top and heavier at the bottom. A calibrated glass float with a known density is then introduced into the column. It suspends precisely at the point where the solution's density matches its own, allowing for accurate and repeatable density measurement.



FEATURES/ADVANTAGES

- **Precise Temperature Control**
Integrated heating/cooling with microcontroller regulation ensures uniform bath temperature within $\pm 0.1^{\circ}\text{C}$ for accurate results.
- **Stable, Low-Vibration Design**
External stirring and optimized bath design reduce vibration, supporting consistent float positioning.
- **Clear and Durable Chamber**
High-transparency resin chamber offers excellent insulation, durability, and full visibility of samples.
- **Improved Accuracy and Range**
Outperforms traditional methods with higher precision, simplified operation, and a broader density range.
- **Easy to Operate**
User-friendly system streamlines testing for lab and industrial use, reducing setup time while maintaining reliability.


TECHNICAL SPECIFICATIONS

SPECIFICATIONS	VALUE
Model	ToronGradient-D1505
Measurement Range	0.80g to 2.70g/cm ³
Accuracy	0.0001 g/cm ³
Density Gradient Tube Dimensions	ID 50mm, length 900mm
Graduation Range	0-850mm, resolution: 1mm
Number of Test Stations	3 (or more)
Temperature Range	20°C to 30°C
Temperature Accuracy	$\pm 0.05^{\circ}\text{C}$
Standard Glass Floats	0.80g to 2.70g/cm ³ , accuracy 0.0001 g/cm ³



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